

Meeting Minutes

August 15, 2018

GWAC Members

David Forfia, Director, Enterprise Architecture & IT Transformation, Electric Reliability Council, TX

Ron Ambrosio, Chief Scientist, Utopus Insights, Inc.

Ron Bernstein, President, RBCG, LLC

Gerald R. Gray, Sr. Program Manager, Electric Power Research Institute (EPRI)

James Mater, Co-Founder and Director, QualityLogic, Inc.

Farrrokh Rahimi, Senior Vice President, Open Access Technology International, Inc.

Leonard Tillman, Partner, Balch & Bingham, LLP

GWAC Members not Present

Tanya Barham, Director of Operations, PECl

Joe Hagerman, Program Director for ICF

Doug Houseman, Grid Modernization Lead, Burns & McDonald

Stephen Knapp, Vice President of Quality Assurance & Energy Markets, Power Analytics Corporation

Lorenzo Kristov, Principal, Electric System Policy, Structure, Market Design

Thomas Sloan, State Representative, State of Kansas

GWAC Associates & Emeritus

Robert Burke, Principal, R. Burke, Consulting

Jeff Morris, Principal, Energy Horizon Corp.

Ken Wacks, Home, Building and Utility Systems

GWAC Guests

Ron Cunningham, AEP

Phil Davis

Trevor Gionet, EBC

Aaron Snyder, EnerNex

Ron Kapavik, Forrester Research

Jeff Katz, Grid Technology, IBM

David Katz, Sustainable Resources

Stephen Kelley

Stuart McCafferty, Black & Veatch

Tim Schoechle, Co. State Univ.

David Wollman, NIST

PNNL Support

Mark Knight, GWAC Administrator

Susan McGuire, GWAC Coordinator

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Mark Knight welcomed everyone and noted that there was no quorum at the start of the meeting. He read through the Action items from the previous GWAC meeting in May and noted if they were complete:

Review Action Items

- **All:** please let Mark know if you will be unable to attend a call ahead of time.
- **GWAC members** to contribute ideas and information for Grid 3.0
- **Aaron:** Add Mark Knight and Ron Ambrosio to the list for Grid 3.0 and talk more about it at the next GWAC meeting
- **Mark** to send the “Why TE” document to Tanya and Lorenzo and to schedule a call with them to discuss more in depth
- **Action:** Chris will send an email out to the GWAC list regarding (4) PUC meetings that NIST is organizing. (complete, David Wollman will provide the information)
- **Action:** James to send an email about the meetings he mentioned to Mark
- **GWAC** attendees please email ideas about the ASHRAE Winter GWAC panel to Mark. Ron Bernstein has submitted the abstract, more will be discussed today.
- **Mark** look into David’s suggestions for ASHRAE – NASPI, Linked In. Mark and David will discuss offline.
- **Mark** to route SEPA working group papers to GWAC for review, when ready
- Mark check out TESC18 files created by Ron Bernstein. Ask Rachel Henderson to send to everyone.
- Mark add the RCBG link to the August minutes regarding TESC18 materials (complete)
<http://www.rb-cg.com/GWAC/>
- Mark look into the combination of University of Minnesota and IEEE
- Mark set up a TE Framework meeting with Ron Ambrosio, Gerald Gray and others from that team
- Mark – get NEMA hotel rate information
- Mark – create a list of GWAC Associate Nominations, and arrange for an online vote
- Mark – make contacts regarding TESC19 and report back to GWAC
- Mark to add UCAlug, ANSI and NARUC and possibly EBC as Liaison groups

GWAC Online Meeting

David Forifa noted that 10:16 made quorum and he gave the call to order

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David asked for a motion to approve the July GWAC online meeting minutes with the action that they be amended to add a link to Ron Bernstein's TESC19 recordings and also to make the changes that Ken Wacks emailed today regarding upcoming ISO meeting details.

Action: Susie to edit the July GWAC meeting minutes with additions and post to the GWAC website.

Gerald Gray gave the motion to approve the minutes with the changes noted.

A second motion was given from Ron Ambrosio.

No further discussion, the minutes were approved unanimously.

Mark reviewed the upcoming Conferences and events.

Regarding the upcoming NIST regional workshops that Chris Villarreal had mentioned on the last GWAC call, David Wollman of NIST noted that these are part of the NIST SmartGrid Interoperability Framework. The details went out in the NIST newsletter earlier this week. The dates are Sept. 12 Georgia for the PSC SE region, Sept. 27 Indiana Utility Regulatory Commission in Indianapolis for the Midwest region, Oct. 16 for the CA PUC for the West region, and Nov. 29 in Warwick Road Island for the NE region. And there are some follow up meetings after these regional meetings. If anyone would like to receive the newsletter please email David Wollman and he will get you on the NIST newsletter mailing list. All the regional meetings are open to the public.

Action Mark: Add the NIST Smart Grid Interoperability Framework meetings to the GWAC upcoming conference list (complete)

James asked about the Interoperability challenge that SEPA announced earlier this week. Mark and Susie will see that the email announcement goes out to the GWAC list after this meeting.

Action: Susie to send out the GMLC Interoperability Challenge announcement to the GWAC list. (complete)

ASHRAE ideas – at the last meeting it was suggested that the GWAC Smart Buildings as Transactive Hubs white paper be used as the basis for the ASHRAE panel that GWAC will host. Ron Bernstein followed up with ASHRAE and submitted the title for the panel based on the white paper. Mark still needs to set up a meeting with Ron Ambrosio, Gerald Gray and others on the white paper team. We will discuss this more later on today's call.

Action Mark: set up a meeting with Ron Ambrosio, Gerald Gray and others on the TEF 4.3 team.

David and Mark are working on a location for TESC19.

Mark still needs to follow up with Doug Houseman regarding IEEE which would be a combination of the Univ. of Minnesota and IEEE.

Formalizing the liaisons – will be discussed

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GWAC Related Conferences and Events

- IEEE PES General Meeting, August 5-9, 2018 Portland, OR
- EPRI Electrification, Long Beach, CA Aug 20 -23
- ISO/IEC Tysons Corner, VA, Sep 24-28
- World Engineering Summit, Charlotte, October 17-19
- GWAC / Grid 3.0 Resilience Workshop, DC, Oct. 30 – 31, 2018
- POWER-GEN International, Orlando, FL, December 4 – 6, 2018
- ASHRAE Winter Conference, Atlanta, GA, Jan 12 - 16, 2019
- Smart Energy Summit, Austin, TX, Feb. 18 – 20, 2019
- DistribuTECH, New Orleans, Feb 5 – 7, 2019
- IEEE ISGT, Washington DC, Feb. 18 – 21, 2019
- 4 Regional NIST meetings
 - September 12 at the Georgia Public Service Commission in Atlanta, Georgia (Southeast)
 - September 27 at the Indiana Utility Regulatory Commission in Indianapolis, Indiana (Midwest)
 - October 16 at the California Public Utilities Commission in San Francisco, California (West)
 - November 29 at the Rhode Island Public Utilities Commission in Warwick, Rhode Island
- Solar Power International (SEPA), Sept. 24 – 27, 2018
- Anaheim Smart Grid Conference hosted by CEATI on Oct 2, 3 2018
- 5th Annual Demand Response and Distributed Energy Resources Oct. 16 – 17, Costa Mesa, CA
- Smart Grid Northwest Conference, “Grid FWD,” Oct. 10 – 11, 2018, Vancouver BC, Canada

During the meeting Jeff Morris sent in a new meeting link, sponsored by the Roosevelt Strategic Council, “Microgrid & DERS Summit” <https://rscouncil.org/microgrids/>, “Building a Resilient, Efficient and Sustainable Energy Future,” Sept. 25 – 26, 2018 in Alexandria, VA. There is an impressive list of speakers that includes the GWAC’s own Ron Ambrosio.

Action: Mark to add this meeting to the list of upcoming meetings

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GWAC Liaisons

Liaison Voting Results

Mark Knight had sent out a poll to the GWAC members regarding the existing and newly nominated GWAC liaisons. Mark presented a slide to show the results of the vote for each organization showing the polling.

NIST – should GWAC retain a liaison with NIST?

90.9% yes 9.1% no

David Wollman is willing to continue on as the representative

Motion: Leonard Tillman, with a second from Ron Ambrosio.

No opposition.

Should GWAC retain a liaison with ISO/IEC

Ken Wacks noted JTC1 subcommittee SC subcommittee 25 for IT equipment

Votes came in as 100% yes

Ken Wacks was nominated and approved.

David asked if we can go with just asking if there are objections to accept the nomination of a person to act as the liaison. This was unanimously approved.

Should GWAC retain a liaison with EPRI?

The voting supported the EPRI nomination.

Gerald Gray was nominated and approved as the EPRI liaison.

Should GWAC retain a liaison with ASHRAE

The voting supported the ASHRAE nomination.

Ron Bernstein volunteered to be the liaison and was approved, there were no objections

Should GWAC retain a liaison with IEEE PES

The voting supported the IEEE PES nomination.

Farrokh Rahimi volunteered to be the liaison and was approved, but Farrokh noted that if Doug Houseman were to volunteer for the liaison position then Farrokh will withdraw.

Should GWAC retain a liaison with SEPA

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The voting supported the SEPA nomination.

David Forfia volunteered to act as the liaison and was approved, there were no objections.

Should GWAC retain a liaison with Energy Blockchain Consortium (EBC)

Mark noted that this organization received many votes – 54.5% yes. The EBC liaison was approved by the online vote.

The nominees Tony Giroti and Ward Camp, are both emeritus GWAC members.

They can suggest a nominee that could be voted on later.

Jeff Katz noted that he thought that EBC was more marketing and less technical oriented than the though was customary for GWAC.

Mark Knight said that was an interesting point. Many of EBC's suggestions for GWAC were outside of the GWAC mission which we discussed on the July online call, but there were some areas noted that were a fit and GWAC may be able to help.

Ken asked if we can clearly say that the EBC liaison is not an endorsement, just an agreement to exchange information. Mark thought so but he said that Gerald Gray will be talking with them and he asked Gerald to note to them that the GWAC liaison relationship does not constitute an endorsement.

David Forfia agreed to follow up with them and ask them to attend and provide more information at next month's GWAC meeting.

Should GWAC request a liaison with NARUC?

Mark Knight noted that NARUC received 81.8% approval from the online voting.

Mark will reach out to Chris Villarreal to see if he wants to be the liaison since he is a member of that organization but was not on the call.

Should GWAC retain a liaison with LonMark

Mark Knight noted that LonMark received a 40% approval, there was a variety of responses. It was not approved

Should GWAC retain a liaison with UCAiug (proposed by Aaron Snyder)

Mark Knight reported that UCAiug received a 36.4% approval in online voting. There were a variety of responses, but it was not approved

David Forfia clarified that for now individual voting is how we decide liaison relationships.

James Mater noted that he would like to see a clear criteria put forth on GWAC liaison relationships. He asked what criteria might allow EBC but not LonMark or UCAiug for example.

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Chair David Forfia noted that the current GWAC bylaws request a vote by the council members but it does not specify how they should make the decision. David said that for the next round we can discuss what criteria should be used to nominate groups; this can be discussed beforehand.

Gerald Gray noted that UCAiug, a user group, seems to be an overlap with IEC.

James said he would like to see David's suggestion followed so that we will have clear criteria before new groups are voted on by the council.

Ken Wacks said in the past a liaison that is active in both organizations so as to be able to facilitate communications was the criteria.

Mark Knight referred to the bylaws and noted that they do not specify a criteria. If the GWAC feels we need more structure around this we could amend the bylaws to define a criteria.

David Forfia said we could discuss more by email and then bring that to the next meeting. David said this would be a parliamentary approach and noted would move GWAC up the maturity scale.

GWAC Associate Nominations

Mark discussed the email response to retaining the current GWAC Associates; Chris Villarreal, Ron Cunningham, Mark Paterson, Jeff Morris and Gordon Matthews. The voting was very vigorous, there were no objections to any associates continuing on. Mark Knight has reached out to everyone on the list by email to see if they are willing to continue and they are, although he has not yet been able to connect with Gordon Matthews.

Action Mark: follow up with Gordon Matthews to see if he wishes to continue

Chair David Forfia asked for a motion on the slate of GWAC Associates who will continue on.

Ron Bernstein gave the motion.

Farrokh Rahimi gave the second.

David Forfia asked for the group to approve and there were no objections, unanimous approval. David then congratulated the new and renewed associates.

Mark Knight noted that Ron Cunningham is the newest member of the group and asked him if he would like to say anything.

Ron Cunningham said he looks forward to being a more active participant and said that he will contribute however he can. He said that he has seen a lot of great GWAC work in the past and wishes to be a part of it.

Action: Susie to contact Ron Cunningham with new member information (complete)

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Mark Knight noted that he will be asking for funds from DOE for an update to the GWAC website site to make it more useable and up to date. He asked for ideas, comments, criticisms of the current site and suggestions on how to improve it. He will write up a plan for the DOE on how the plan to refresh the website for next year's budget proposal

Action GWAC participants: Please send your ideas to Mark and Susie and on how to refresh the GWAC website.

2019 TESC Planning

Mark Knight noted that because SEPA did not agree to keep the conference as a standalone event, GWAC would not be partnering with them next year.

GWAC members are favoring a partnership with IEEE and a Minnesota location if it can be worked out.

David Forfia and Mark Knight have both reached out to Doug Houseman and are awaiting a reply from him yet regarding ideas for IEEE hosting TESC19.

Smart Grid Northwest has hosted the conference for four years, and they have expressed a desire to continue on in a supporting role. Mark will follow up with them as well.

Action: Mark and David will try to contact SGNW next week to find out if they are interested in hosting TESC19.

TE Framework Update

There have been edits to early sections. Chris Villarreal and Leonard Tillman have updated text for section 4.1. Lorenzo Kristov and Chris Villarreal have updated text for section 4.2. Gerald Gray gave text to Ron for review of section 4.3. Doug Houseman has updated text for section 4.4. Mark will discuss the architecture diagram with Gerald Gray. This needs to be complete by the end of September.

Action: Mark to follow up with Gerald Gray on the Architecture diagram discussion

Action: Leonard Tillman and Mark Knight to discuss TE Framework by email.

Mark attended a transmission conference at the invite of Tom Sloan yesterday. Mark was the advocate there for TE. Tom was supportive of TE. An updated Framework might be helpful for this group going forward.

TE Roadmap Update

This document is posted on the GWAC website as a draft with an invitation for public comment.

Comments were received this month from Stuart McCafferty. Mark will be working with Stuart regarding his feedback comments and he hopes to get more comments back soon and incorporate them into the TE Roadmap so that it can soon be moved from Draft status to Final.

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Action: GWAC participants are asked to provide TE Roadmap feedback and comments. These can be sent to Susie McGuire, Mark Knight, and/or David Forfia.

Stuart McCafferty said he didn't think the Roadmap looked like a roadmap. He was hoping to see dates and milestones, and maybe a couple roadmaps for various aspects. There was a lot of tables and information, more than he expected.

Mark reflected that perhaps it is more of a trend than a roadmap showing how markets develop. There are some targets and he noted that there are three phases. Mark commented that where you are in the phases will vary from state to state so this is why we didn't list specific dates. Stuart said he understood this. He also appreciated all the information about technology and other drivers.

Action: Mark will keep Stuart updated on changes to the Roadmap.

Grid 3.0 Workshop/GWAC Face to Face

Mark Knight reminded the group of the Grid 3.0 / GWAC F2F meeting, it is scheduled for Oct. 30 -31 at the NEMA Offices, 1300 17th ST N, #900, Arlington, VA 22209. Hotel Rates for NEMA can be found on their website under the about us – Hotels. <https://www.nema.org/About/Visit/Pages/Hotels.aspx>

Action Mark: Check NEMA rates for use by GWAC

Leonard Tillman asked if the NEMA invite has gone out, he has a couple of utility associates that he would like to invite to participate.

Mark will follow up with Aaron Snyder on this. The invite will include the overview and an agenda which has taken Ron Melton and Mark Knight some time to work out the details, but it will be coming out soon.

Action: Mark to follow up with Aaron Snyder on the Grid 3.0 invitation

Mark noted that the GWAC F2F will take place on the morning of Oct. 30th. GWAC Council members can attend the Resilience workshop which will follow the GWAC meeting on the afternoon of the 30th and all day on the 31st.

GWAC White Paper Update

Smart Buildings as Transactive Hubs

Team: Mark Knight, Ron Bernstein, Gerald Gray, Joe Hagerman, Phil Davis, Ken Wacks, Robert Burke

The plans for this paper are taking shape. Ron Bernstein submitted an abstract based on this paper as the basis for a two hour panel session at the ASHRAE winter meeting (Jan. 2019). Based on experience this panel is expected to be very well attended.

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Ron Bernstein noted that the abstract has been accepted although it is not yet showing on the website. The timeslot is expected to be Monday, January 14, from 3:00pm to 5:00pm.

GWAC Educational Session at AHR Expo: “Grid Connected Buildings as a Transactive Hub”

Abstract: Integrating smart buildings and the smart grid using transactive energy as a core component provides building owners, system integrators, and suppliers with a great opportunity to provide enhanced services. As more building products become “grid aware” and “IoT aware” the opportunity to leverage their intelligence and capabilities is growing. More end devices can provide direct impact into the usage and coordination of distributed energy resources. Connecting these typically disparate systems into a common infrastructure using open interoperable concepts will provide greater costs savings, energy reliability and resilience, and easier management. Learn about these core concepts from subject matter experts bridging the grid/built environment. Potential speakers identified are: Ron Ambrosio, Mark Knight, Ron Bernstein, Gerald Gray

Valuing Control in a TES/Economic Evaluation metric for TES

Team: Stephen Knapp, Farrokh Rahimi, Dave LeVee, Rahul Bahadur

Plan needed for scope and title. Stephen and Mark have exchanged an initial email.

Liaison Reports

NIST - David Wollman – he sent the regional workshop information to Susie

Action: Susie to attach NIST Newsletter as a separate attachment with the meeting minutes

September 12 at the Georgia Public Service Commission in Atlanta, Georgia (Southeast)
September 27 at the Indiana Utility Regulatory Commission in Indianapolis, Indiana (Midwest)
October 16 at the California Public Utilities Commission in San Francisco, California (West)
November 29 at the Rhode Island Public Utilities Commission in Warwick, Rhode Island

ISO/IEC - Ken Wacks noted that the next semi-annual meeting of ISO/IEC JTC 1/SC 25, on developing international standards for home and building automation (including energy management), will be held September 24-28 in Falls Church, Virginia (near Washington, DC). The meeting agenda is based on extending energy management to apartment buildings and providing cybersecurity and privacy to protect occupant safety and privacy. They will be joined by international experts from Canada, Europe, Asia, and probably Australia.

Anyone interested in attending this meeting should contact Ken www.kenwacks.com

ASHRAE Ron Bernstein had no updates.

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IEEE PES Portland meeting update - Farrokh Rahimi attended talks on distribution systems, TE and Blockchain. He noted another meeting IEEE ISGT coming up in Feb. 2019 in Washington DC there are opportunities to submit proposals for panel sessions on TE related issues. There will be a need for GWAC participation on panel sessions. Mark asked if there would be a chance to discuss the TE Framework and get updates perhaps to specific areas. Farrokh said that this would be a good topic and he would be happy to set up a panel on Transactive Energy. He will prepare an outline and send it out for comment by the GWAC and he would ask for speakers from the GWAC community.

The deadline for submission is the end September, the meeting is Feb. 19 – 21, 2019 in Washington DC.

Action: Farrokh to submit a proposal to IEEE ISGT for a TE panel that would feature GWAC participants

SEPA – David Forfia, no updates

Ron Bernstein – Consumer Technology Associations – CTA is exploring grid 2.0 relationships from an IOT perspective such as smart appliance and smart buildings talking to the grid. There is a meeting in late Sept. or early Oct., Ron will keep us informed. Might be good for future meetings with regard to transactive processes. Ron said this is very new, and he did not see it as an overlap of previous work.

Ken said he had not heard about this and thought it might overlap with the CTAR 7.8 committee that he chair, they work on the MCI standard that originated at SGIP.

Ron said it is very new, it's not even on an agenda yet.

Ron did say he had seen a standard for smart water heaters which might be an overlap and Ken said that's the standard that he had been talking about. Ron will contact Ken for details.

David Katz sent this to a related article entitled, "Software Saves Energy, Costs, and More" by [green builder media](#) that features research by NREL.

Mark noted that all items on the meeting agenda have been addressed. He asked if there were any other issues that should be discussed and none were put forth.

David Forifa asked for a motion to adjourn the meeting 40 minutes early.

Ron Bernstein gave the motion.

Gerald Gray gave the second motion.

Link sent from Jeff Morris: Roosevelt Strategic Council, meeting "Microgrid & DERS Summit" <https://rscouncil.org/microgrids/>, "building a resilient, efficient and sustainable energy future," Sept. 25 – 26, 2018 in Alexandria, VA.

I see Ron Ambrosio on the speakers list as well as DOE's Bruce Walker.